



Hill Air Force Base, Utah

Final

Environmental Assessment for the Explosives Clear Zone Master Plan

June 2003

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FINDING OF NO SIGNIFICANT IMPACT

Purpose and Need for the Proposed Action

Hill Air Force Base (AFB) is home of the Ogden Air Logistics Center (OO-ALC), one of three Air Logistics Centers that are part of the Air Force Materiel Command. The current mission of Hill AFB is to provide depot repair, modification, and maintenance support to major aircraft and weapon systems. The purpose of this Environmental Assessment is to determine whether implementation of the Proposed Action (Explosives Clear Zone (ECZ) Master Plan) would have a significant impact on human health or the environment. The purpose of the ECZ Master Plan is to enhance mission effectiveness and resource efficiency, to integrate all organizational requirements, and to formulate a corporate execution strategy. The proponent for this action is the Directorate of Specialized Management at Hill AFB.

This FONSI is for the portion of the actions proposed for FY04, which includes the construction of 21 igloos for the 649th MUNS, 5 igloos and 1 maintenance facility for QL, 1 igloo for WSEP and 3 new igloos for SDB (Small Diameter Bomb). These actions will require the demolition of 6 igloos in the MAMS I and 1 in the MAMS II area.

There are significant limitations to the existing facilities on the Base. The ECZ contains 621 facilities that are affected by Quantity – Distance (Q-D) standards. Munitions are stored in Earth Covered Magazines (ECM), many of which were constructed in the 1930s and 1940s and are severely outdated in terms of design, configuration, and effective utilization. Many are deteriorating and in need of extensive rehabilitation or replacement. The configuration of the ECM entry doors makes munitions loading and unloading inefficient. The interior configuration of the ECMs does not allow full utilization of interior space for munitions storage. The placement of ECMs was based on Q-D criteria at the time and is now outdated and inefficient to meet current mission requirements. In sum, the existing facilities have been impacted by a reduction of nine million pounds of Net Explosive Weight (NEW) capacity and are two million NEW pounds short of meeting current mission mandates with little or no surge capability. Current requirements predict a need for at least a 40 percent increase in square foot capacity.

Selection Criteria and Alternatives Considered

Alternatives available for consideration for the implementation of ECZ Master Plan initiatives were limited. They included the following:

- Renovation of existing facilities and utilizing alternate installations were considered during the formulation of alternatives. Alternate installations included use of existing facilities on Hill AFB, and locating the new munitions storage off Hill AFB at Little Mountain or Dugway. These locations were found to be unfeasible, inconsistent with installation work assignments, and not economical. Therefore, alternate space and renovation alternatives were not retained for further consideration.

- Construction of no new facilities (No Action Alternative).

The selection criteria established to evaluate the Proposed Action and the No Action Alternative were as follows: mission accomplishment, space and other special requirements, economic feasibility, and minimization of environmental impacts.

Impact on Resources

The new facilities would accommodate all special space requirements such as quick response, 24-hour alert status capabilities, enhancement of munitions storage capacity and function on the base, and response to existing and future mission requirements. Worker health and safety issues would be addressed in standard operating procedures and in facility designs, and would be reviewed with the contractor(s) performing the work. Noise and air emissions generated by construction activities would be temporary. Air emissions and waste streams from the operation of the new facilities would be minimal. Because the new construction would be located within an area slated for munitions storage and airfield operations by Hill AFB, air quality, biological resources, surface water quality, groundwater hydrology, and earth resources would be minimally impacted by the Proposed Action.

The seven igloos proposed for demolition in FY04 are potentially eligible for protection in accordance with 36 CFR § 800, and therefore require coordination with the Utah State Historic Preservation Office (USHPO) and the Federal Advisory Council on Historic Preservation (ACHP). The facilities proposed for demolition are not unique representatives of their respective architectural styles and identical buildings in the surrounding areas are not proposed for demolition. However, in accordance with 36 CFR§ 800, appropriate strategies have been determined and a Memorandum of Agreement (MOA) has been submitted to the USHPO and ACHP and their concurrence is expected. It is also expected that the measures proposed in the MOA will be acceptable to all parties.

A public notice was published in the Hilltop Times and other selected newspapers in the vicinity of Hill AFB. The notice contained details of the proposed action and any predicted environmental impacts. There were no comments received pertaining to this action.

Minimal socioeconomic impacts are anticipated from the Proposed Action. Operation and maintenance of the new modular storage munitions and ICBM magazines would not require a significant number of new base employees. Implementation of the National Missile Defense Initiative would require some new contractor staff. Although the No Action Alternative would forfeit Air Force current and future mission capabilities due to insufficient storage space and net explosive capacity for munitions, the No Action Alternative would not have any negative impacts on the environment at Hill AFB.

Based on this environmental assessment, the proposed action meets the selection criteria for mission accomplishment, space and other special requirements, economic feasibility and minimization of environmental impacts.

Conclusion

Based on the findings of this environmental assessment, I have determined the proposed action to implement the FY04 portion of the Explosives Clear Zone Master Plan would not have significant adverse effects on the human environment or any of the environmental resources as described in the environmental assessment. Therefore, issuance of a finding of no significant impact is justified and environmental impact statement is not required.



Environmental Protection Committee Chairperson

16 Sep 03
Date

STAFF SUMMARY SHEET

11674

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	OO-ALC/ EMR	Coord	Ellis, GS-13 6 Jun 03	1	75OSS/ OSAM	Coord	Michael, GS-12, 12 Aug 03
2	OO-ALC/ JACE	Coord	Shaw, GS-13 26 Jun 03	7	75CEG/ CC	Coord	Michael, GS-12, 12 Sep 03
3	OO-ALC/ XPP	Coord	Griff, GS-14 14 Aug 03	8	75ABW/ CC	Coord	1st Lt 1 con 12 Sep 03
4	OO-ALC/ XP	Coord	Fuller, GS-13 12 Sep 03	9	OO-ALC/ CCX	Coord	For con Rump
5	OO-ALC/ QL	Coord	Fuller, GS-13 12 Sep 03	10	OO-ALC/ CD	Sign	9/15

SURNAME OF ACTION OFFICER AND GRADE

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SUSPENSE DATE

Winn, GS-12 OR Kay - 70383

EMR

7-0383

kp

SUBJECT

Environmental Assessment for the Explosives Clear Zone Master Plan

DATE

3 Jun 03

SUMMARY

1. An Environmental Assessment (EA) Tab 2, has been prepared to determine whether implementation of the Explosives Clear Zone (ECZ) Master Plan would have a significant impact on human health or the environment. The purpose of the ECZ Master Plan is to enhance mission effectiveness and resource efficiency, to integrate all organizational requirements, and to formulate a corporate execution strategy. A Finding of No Significant Impact (FONSI) is located at Tab 3. An Executive Summary is located at Tab 1.

2. The EA was prepared in accordance with the National Environmental Policy Act of 1969 and Air Force Instruction (AFI) 32-7061.

3. RECOMMENDATION OO-ALC/CD, Environmental Protection Committee Chariman, sign the FONSI, Tab 3


W. ROBERT JAMES
Director of Environmental Management

- 3 Tabs
1. Executive Summary
 2. Environmental Assessment
 3. Finding of No Significant Impact

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TI	ACTION	SIGNATURE (Surname), GRADE AND DATE	TI	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	OO-ALC/SE	Coord <i>[Signature]</i> 14 Jun 03	1		
2			7		
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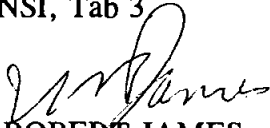
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3	OO-ALC/ XPP	Coord	<i>Boff, GS-14 14 Aug 03</i> <i>see comments</i>	8	75ABW/ CC	Coord	
4	OO-ALC/ XP	Coord	<i>Fuller (14)</i>	9	OO-ALC/ CCX	Coord	
5	OO-ALC/ QL	Coord	<i>Winn 19 Jun</i>	10	OO-ALC/ CD	Sign	

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**FINAL ENVIRONMENTAL ASSESSMENT
FOR THE
EXPLOSIVES CLEAR ZONE MASTER PLAN**

HILL AIR FORCE BASE

June 2003

Project No.: 1690593.19180102

**Montgomery Watson Harza
4525 South Wasatch Blvd., Suite 200
Salt Lake City, Utah 84124**

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LIST OF ACRONYMS AND ABBREVIATIONS

ABW	Air Base Wing
AFB	Air Force Base
AFI	Air Force Instruction
AFMC	Air Force Materiel Command
AICUZ	Air Installation Compatible Use Zone
AMDS/SGPB	Bio-Environmental Engineering Flight
AO	Approval Order
APZs	Accident Potential Zones
ATS	Air Transport Service
CAA	Clean Air Act
CERCLA	Comprehensive Environmental, Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DOT	Department of Transportation
EA	Environmental Assessment
ECM	Earth Covered Magazine
ECZ	Explosives Clear Zone
EM	Environmental Management Directorate
EOR	End of Runway
EPA	United States Environmental Protection Agency
FFA	Federal Facilities Agreement
FW	Fighter Wing
HC/D	Hazard Class/Division
ICBM	Intercontinental Ballistic Missile
MAK	Missile Directorate
MAMS	Munitions and Missile Storage
MSMs	Modular Storage Magazines
MUNS	Munitions Squadron
MWH	Montgomery Watson Harza
NAAQS	National Ambient Air Quality Standards
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NEW	Net Explosive Weight
NHPA	National Historic Preservation Act
NMD	National Missile Defense

NOI	Notice of Intent
NO _x	Oxides of Nitrogen
OO-ALC	Ogden Air Logistics Center
OSHA	Occupational Safety and Health Administration or Occupational Safety and Health Act
PM ₁₀	Particulate Matter Less Than 10 Microns in Diameter
PM _{2.5}	Particulate Matter Less Than 2.5 Microns in Diameter
Q-D	Quantity - Distance
QL	Directorate of Specialized Management
SAT	Strategic Air Transport
SHPO	State Historic Preservation Office
SOPs	Standard Operating Procedures
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality
UDEQ	Utah Department of Environmental Quality
USAF	United States Air Force
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Purpose and Need

Hill Air Force Base (AFB) is home of the Ogden Air Logistics Center (OO-ALC), one of three Air Logistics Centers that are part of the Air Force Materiel Command. The current mission of Hill AFB is to provide depot repair, modification, and maintenance support to major aircraft and weapon systems. The purpose of this Environmental Assessment is to determine whether implementation of the Proposed Action (Explosives Clear Zone (ECZ) Master Plan) would have a significant impact on human health or the environment. The purpose of the ECZ Master Plan is to enhance mission effectiveness and resource efficiency, to integrate all organizational requirements, and to formulate a corporate execution strategy. The proponent for this action is the Directorate of Specialized Management at Hill AFB.

The Proposed Action initiatives are summarized in Table ES-1.

TABLE ES-1 ECZ MASTER PLAN MAJOR INITIATIVES	
Initiative	Description
1. Modular Storage Munitions (MSM) Revitalization	Demolish 10 existing Earth Covered Magazines (ECM) Demolish 2 Clay Tile Magazines Construct up to 80 new MSMs
2. Intercontinental Ballistic Missile (ICBM) Storage Revitalization	Demolish 44 single missile igloos Construct 3 Navy Type ICBM Storage Magazines
3. National Missile Defense (NMD)	Construct new NMD facilities
4. Airfield Operations Short Term Development Plan	Construct new End of Runway (EOR) facility, Taxiway C to A parking ramp, expand Hot Pad 6
5. Propellant Lab Relocation	Move Propellant Lab to Munitions and Missile Storage (MAMS) Area II

There are significant limitations to the existing facilities on the Base. The ECZ contains 621 facilities that are affected by Quantity – Distance (Q-D) standards. Munitions are stored in Earth Covered Magazines (ECM), many of which were constructed in the 1930s and 1940s and are severely outdated in terms of design, configuration, and effective utilization. Many are deteriorating and in need of extensive rehabilitation or replacement. The configuration of the ECM entry doors makes munitions loading and unloading

inefficient. The interior configuration of the ECMs does not allow full utilization of interior space for munitions storage. The placement of ECMs was based on Q-D criteria at the time and is now outdated and inefficient to meet current mission requirements. In sum, the existing facilities have been impacted by a reduction of nine million pounds of Net Explosives Weight (NEW) capacity and are two million NEW pounds short of meeting current mission mandates with little or no surge capability. Current requirements predict a need for at least a 40 percent increase in square foot capacity.

Selection Criteria and Alternatives Considered

Alternatives available for consideration for the implementation of ECZ Master Plan initiatives were limited. They included the following:

- Renovation of existing facilities and utilizing alternate installations were considered during the formulation of alternatives. Alternate installations included use of existing facilities on Hill AFB, and locating the new munitions storage off Hill AFB at Little Mountain or Dugway. These locations were found to be unfeasible, inconsistent with installation work assignments, and not economical. Therefore, alternate space and renovation alternatives were not retained for further consideration.
- Construction of no new facilities (No Action Alternative).

The selection criteria established to evaluate the Proposed Action and the No Action Alternative were as follows: mission accomplishment, space and other special requirements, economic feasibility, and minimization of environmental impacts.

Impact on Resources

The new facilities would accommodate all special space requirements such as quick response, 24-hour alert status capabilities, enhancement of munitions storage capacity and function on the base, and response to existing and future mission requirements. Worker health and safety issues would be addressed in standard operating procedures and in facility designs, and would be reviewed with the contractor(s) performing the work. Noise and air emissions generated by construction activities would be temporary. Air emissions and waste streams from the operation of the new facilities would be minimal. Because the new construction would be located within an area slated for munitions storage and airfield operations by Hill AFB, air quality, biological resources, surface water quality, groundwater hydrology, cultural and earth resources would not be impacted by the Proposed Action.

Minimal socioeconomic impacts are anticipated from the Proposed Action. Operation and maintenance of the new modular storage munitions and ICBM magazines would not require a significant number of new base employees. Implementation of the National Missile Defense Initiative would require some new contractor staff. Although the No Action Alternative would forfeit Air Force current and future mission capabilities due to

insufficient storage space and net explosive capacity for munitions, the No Action Alternative would not have any negative impacts to the environment at Hill AFB.

Based on this Environmental Assessment, the Proposed Action meets the selection criteria for mission accomplishment, space and other special requirements, economic feasibility, and minimization of environmental impacts.

Conclusion

Based on the findings of this Environmental Assessment, the Proposed Action to implement the ECZ Master Plan would not have significant adverse effects on the human environment or any of the environmental resources as described in the Environmental Assessment. Therefore, issuance of a Finding of No Significant Impact is justified and an Environmental Impact Statement is not required.

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

This document is a draft Environmental Assessment (EA) on the proposed Explosives Clear Zone (ECZ) Master Plan (Proposed Action). This EA is required by the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations to document and analyze impacts of the project on the quality of the human environment. It covers impacts of the Proposed Action and the No Action Alternative, and any cumulative impacts that could occur as a result of other past, present or future projects within the ECZ on the Hill Air Force Base (AFB).

This EA examines the Proposed Action and briefly provides sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The EA and FONSI are intended to satisfy disclosure requirements of NEPA and will serve as the NEPA compliance document for the Proposed Action. An EIS would be required if the EA determines that implementing the Proposed Action would result in significant impacts. This EA also is intended to serve as the Biological Assessment under the provisions of Section 7 consultation requirements of the Endangered Species Act, 16 USC 1531-1544.

The Hill AFB ECZ Management Team is proposing to demolish obsolete munitions storage facilities and construct new munitions storage facilities; demolish inefficient

intercontinental ballistic missile (ICBM) storage facilities and construct Navy Type ICBM Storage Magazines; construct facilities for the National Missile Defense (NMD) system; construct new aircraft servicing, parking and taxiing areas; and relocate the Propellant Laboratory.

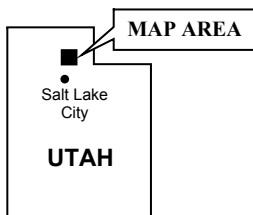
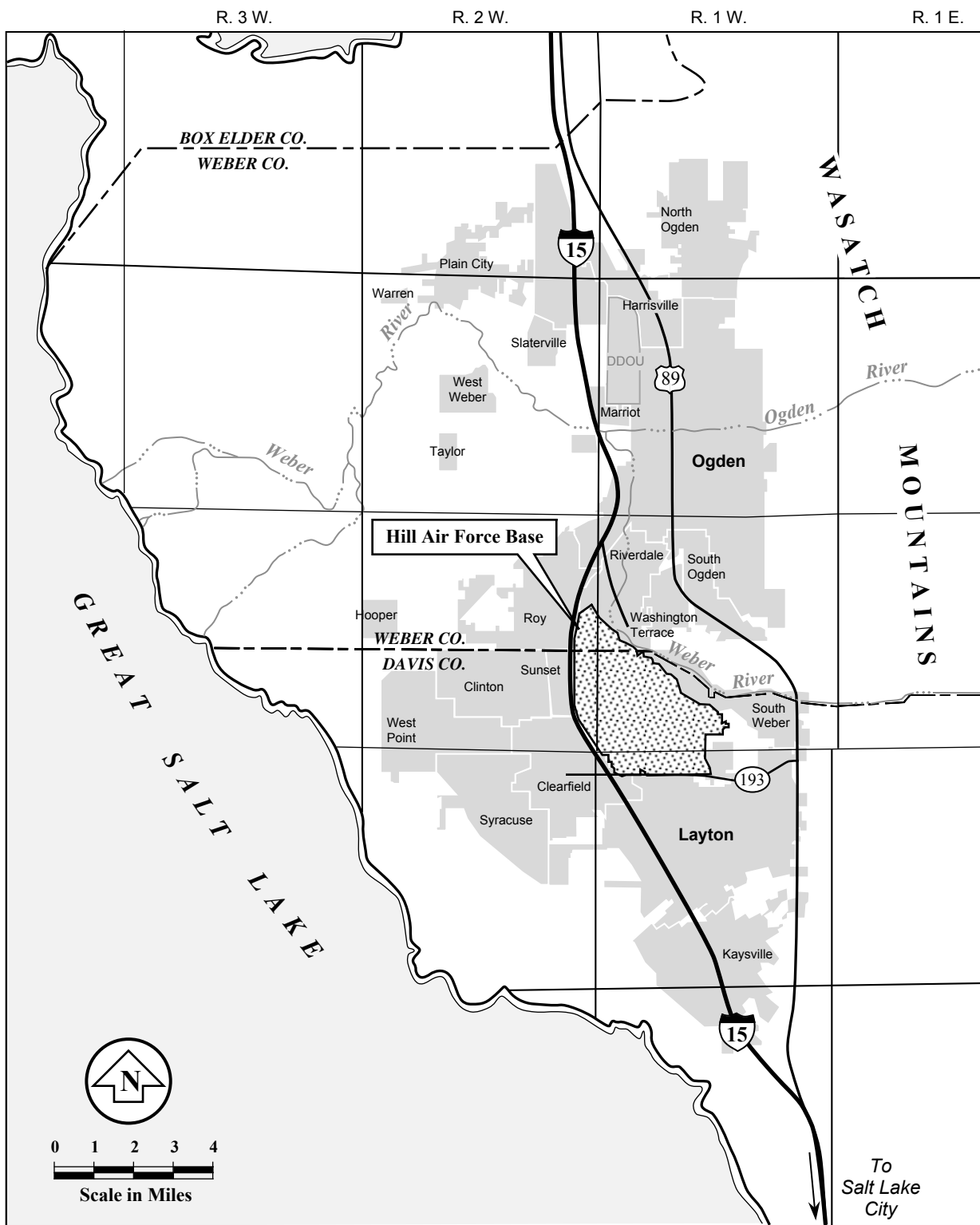
This section describes the background, history, purpose and need of the Proposed Action. It also describes interrelated projects and actions required to authorize the project.

1.2 LOCATION OF THE PROPOSED ACTION

Hill AFB is located in northern Utah, approximately 25 miles north of Salt Lake City and five miles south of Ogden, as shown on Map 1-1, Vicinity Map. Hill AFB occupies approximately 6,700 acres in Davis and Weber Counties. Interstate Highway 15 forms the western base boundary and State Route 193 is the southern boundary. The northern and northeastern perimeters are bounded by the privately owned Davis-Weber irrigation canal and the southeastern boundary borders a municipal incineration facility and open farmland adjacent to private residences. The Proposed Action would occur centrally within Hill AFB in the ECZ as shown on Map 1-2, Hill Air Force Base ECZ Cloud.

1.3 PREVIOUS ENVIRONMENTAL DOCUMENTATION

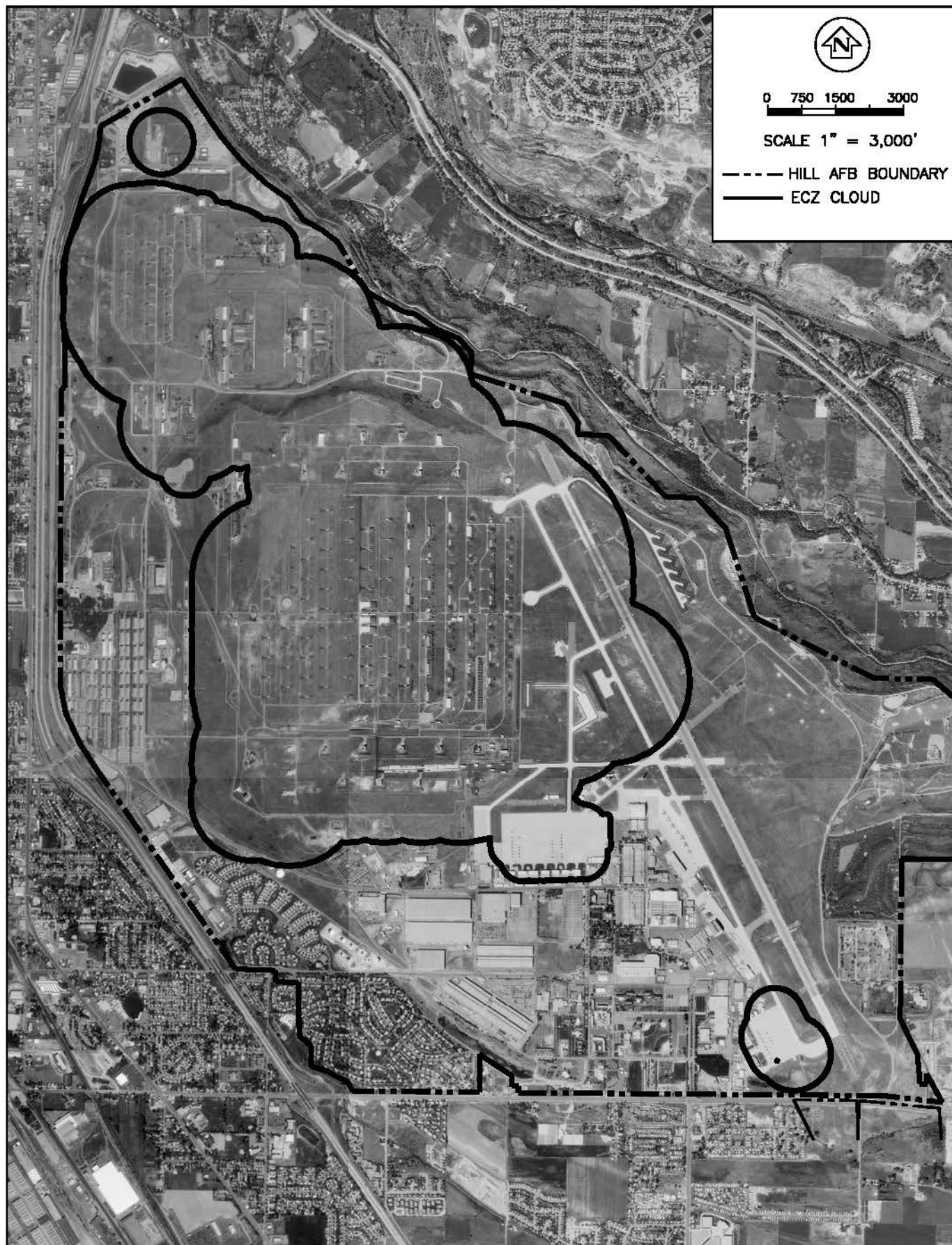
An *Environmental Assessment for the Construction of Modular Storage Munitions* was completed in December 2001 and covered environmental conditions and potential



**HILL AIR FORCE BASE
VICINITY MAP
MAP 1-1**

169059

PROJ



**HILL AIR FORCE BASE
ECZ CLOUD
MAP 1-2**

impacts in the ECZ similar to those that will be discussed in this EA. An EA has been completed for the Propellant Laboratory.

1.4 PURPOSE AND NEED

The Proposed Action would respond to the following needs:

- Increase munitions storage capacity at Hill AFB to meet current and future mission requirements
- Increase efficiency of munitions storage and servicing operations
- Reduction of the ECZ cloud to permit greater flexibility in Base operations and facility siting
- Increase efficiency and capability of airfield operations to meet mission requirements

The purposes of the Proposed Action are:

- To enhance mission effectiveness and resource efficiencies
- To integrate all organizational requirements within the ECZ
- To preserve ECZ integrity

1.5 DECISION TO BE MADE AND THE DECISIONMAKER

The decision to be made, based on the results of this EA, is whether to proceed with implementation of the proposed ECZ Master Plan or to prepare an Environmental Impact Statement (EIS). This decision shall be based in part on the impact the ECZ Master Plan may have on human health and the environment. This process is also intended as a planning tool to determine which of the alternatives produces the best results relative to mission accomplishment, economic feasibility, and environmental impacts. This decision will be determined by the Hill AFB Environmental Protection Committee in accordance with Air Force Instruction (AFI) 32-7061.

1.6 SCOPE OF THE ENVIRONMENTAL REVIEW

The scope of this EA is to define issues that potentially impact the decision to implement the ECZ Master Plan. The following potential issues are presented and discussed in detail in Sections 3.0 and 4.0 of this EA: air quality, surface water quality, groundwater hydrology, noise, land use, geology, soils, threatened and endangered species, flora, fauna, safety and occupational health, socioeconomics, infrastructure and utilities, and hazardous materials and waste.

The Administrative Record for this project contains all scoping information, site inspection notes, and correspondence compiled during the preparation of this EA. The

Administrative Record for this project will be available from the Hill AFB Environmental Management Directorate (EM) upon request.

1.7 APPLICABLE REGULATORY REQUIREMENTS

1.7.1 Resource Conservation and Recovery Act

As a result of routine demolition or construction activities, small quantities of construction wastes may be generated. No hazardous materials would be stored onsite during demolition or construction. Hill AFB has a Hazardous Waste Management Plan that directs the routine and proper handling of hazardous waste in accordance with the Resource Conservation and Recovery Act (RCRA), the Utah Solid and Hazardous Waste Act, and the Utah Hazardous Waste Management Regulations contained in the Utah Administrative Code (UAC) Section R315-1. Site personnel would follow the Hazardous Waste Management Plan in the event of handling, storing, and disposal of all hazardous wastes, although such action is not anticipated to be necessary.

1.7.2 Clean Air Act

As a federal facility in a designated maintenance area for ozone (refer to Section 3.3.1), any action at Hill AFB must undergo review in accordance with the Clean Air Act's (CAA) Federal Conformity Rule, Part 93 of Title 40 of the Code of Federal Regulations (40 CFR 93). This rule was promulgated by the U.S. Environmental Protection Agency

(EPA) to ensure federal actions conform to the requirements of local and State Implementation Plans, which prescribe the air quality planning goals and enforce National Ambient Air Quality Standards (NAAQS). Section 4.3.1 addresses air quality impacts related to the Proposed Action and No Action Alternative.

1.7.3 Occupational Safety and Health Act

The Occupational Safety and Health Administration (OSHA) requires employers to comply with regulations and standards established by OSHA to protect worker health and safety. During proposed demolition or construction activities, all construction personnel would be required to comply with Title 29 of the Code of Federal Regulations, Part 1926 (29 CFR 1926), *Safety and Health Regulations for Construction*. In addition, all personnel routinely involved with the handling of hazardous materials or waste should be trained in *Health and Safety for Hazardous Waste Operations and Emergency Response* (29 CFR 1910.120) and *Hazard Communication* (29 CFR 1910.1200).

1.7.4 National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), Section 106, requires federal agencies to take into account how each of its proposed undertakings could affect historic properties that are 50 or more years old. There are structures in the project area (Modular Storage Munitions (MSM) and above ground magazines) that are greater than 50 years

old. Hill AFB will document all structures that would be covered by NHPA, and the Hill archeologist will coordinate with the State Historic Preservation Office (SHPO).

1.7.5 Comprehensive Environmental Response Compensation and Liability Act

The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) requires that sites where hazardous liquid and solid wastes generated by installation operations were disposed (referred to as “operable units”) be addressed through appropriate remedial actions in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Hill AFB was listed on the National Priorities List (NPL) in 1987. Groundwater quality monitoring is a common element to many investigative and remedial action projects. Consequently, numerous wells have been installed throughout the Base to gather groundwater data. Because the Base has entered into a Federal Facility Agreement (FFA) with the Utah Department of Environmental Quality (UDEQ) and the U.S. EPA Region VIII, the continuation of data collection at many of these points is required. Consequently, every effort should be made to protect the integrity of monitoring wells as well as any remediation systems in the vicinity of the Proposed Action.

1.8 INTRODUCTION TO THE ORGANIZATION OF THIS DOCUMENT

The remainder of this document is organized as follows. The Proposed Action, alternatives to the Proposed Action, and the No Action Alternative are described and

evaluated in Section 2.0. The existing conditions and environmental resources in the area to be affected by the Proposed Action are described in Section 3.0. Section 4.0 contains the basis for the comparison of the environmental consequences of each of the alternatives. A list of preparers and their responsibilities is provided in Section 5.0. A list of agencies and persons contacted during the preparation of this EA, including the topic of consultation and date of contact, is provided in Section 6.0. References used in the preparation of this EA are listed in Section 7.0. Additional information is included in the Appendices.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The purpose of this section is to describe and compare the Proposed Action, as proposed by the Ogden Air Logistics Center (OO-ALC), and identified project alternatives, including the No Action Alternative. The selection criteria used to compare each of the alternative actions are described.

2.2 FORMULATION OF ALTERNATIVES

The Hill AFB Explosives Clear Zone (ECZ) Master Plan was published on 15 March 2002 after a comprehensive analysis and planning program by the ECZ Management Team and the Ogden Air Logistics Center Executive Council. The purpose of the ECZ Master Plan is to enhance mission effectiveness and resource efficiency, to integrate all organizational requirements, and to formulate a corporate execution strategy. The ECZ Master Plan and this Environmental Assessment are intended to view the ECZ comprehensively and cover all demolition of existing structures and construction of all new facilities within the ECZ. Subsequent to finalization of the ECZ Master Plan, specific facilities plans and funding requirements were incorporated into the following 1391 Forms for immediate implementation: KRSM023002, KRSM043009, KRSM003013 and KRSM033005 (See Appendix B). Additional new facilities are proposed for the National Missile Defense (NMD) program, and Airfield Operations

Short Term Development Plan. Full bed down of the ECZ Master Plan would take place over a period of approximately 15 years, as dictated by mission requirements.

The ECZ at Hill AFB is a safety zone around potential explosives sites (ECZ “cloud”), shown on Map 1-2. The ECZ covers approximately 3,054 acres (over 47% of the base) and is tasked to multiple organizations with a variety of missions, including storage, maintenance, testing, transportation, disposal and contingency operations. The area is organized into five areas: Missile and Munitions Storage Areas (MAMS I and MAMS II), the 1600 and 1900 propellant aging and surveillance facilities areas, and the explosives-loaded aircraft parking areas. Current owners/sponsor organizations using the ECZ include the 388 Fighter Wing (FW), 419 FW, 649 Munitions Squadron (MUNS), Directorate of Specialized Management (QL), Missile Directorate (MAK), MAN, and 75 Air Base Wing (ABW). Supported ordinance includes conventional missiles, armament for the two fighter wings, and ICBMs.

The development, use, and location of facilities within the ECZ are governed by the Quantity – Distance (Q-D) criteria contained in Air Force Manual 91-201, which establishes the quantity of explosive material (Net Explosive Weight – NEW) and the distance separation relationships to provide defined levels of protection. The ECZ contains 621 facilities that are affected by Q-D standards. Munitions are stored in Earth Covered Magazines (ECM), many of which were constructed in the 1930s and 1940s and are severely outdated in terms of design, configuration, and effective utilization. Many are deteriorating and in need of extensive rehabilitation or replacement.

The configuration of the old-style munitions igloo entry doors makes munitions loading and unloading inefficient. The interior configuration of the ECMs does not allow full utilization of interior space for munitions storage. The placement of ECMs (1930s and 1940s) was based on Q-D criteria of the time and is now outdated and inefficient to meet current mission requirements. In sum, the existing facilities have been impacted by a reduction of nine million pounds of NEW capacity and are two million NEW pounds short of meeting current mission mandates with little or no surge capability. Current requirements see a need for at least a 40 percent increase in missile storage capacity.

Alternate locations and use of existing facilities were considered during the formulation of alternatives. However, the requirements of the new mission are limiting, due to specific space and location requirements, which are described herein. Cost implications and mission efficiency also were factored into the formulation of alternatives. Upgrades to on-site existing facilities in order to meet the requirements of existing and new missions would be both costly and impractical, as discussed in Section 2.3. Construction of new facilities at Hill AFB meets the purpose and need of the Air Force mission and is less costly than the alternatives that were explored.

Construction of new facilities was planned in concentric rings to place the highest NEW in the center and lower NEW in the periphery of the ECZ. By concentrating the highest hazard class/division (HC/D) explosives – HC/D 1.1 – centrally, more total NEW could be stored or processed, and the ECZ cloud minimized.

2.3 IDENTIFICATION OF ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Renovation of existing facilities and utilization of alternate installations were both considered during the formulation of alternatives. Several alternative installations on Hill AFB were explored for relocating the workload. These alternative installations include use of existing facilities on Hill AFB, and locating the new MSMs or booster storage facilities off Hill AFB at locations such as Little Mountain or Dugway Proving Ground. These locations were found to be unfeasible, inconsistent with installation work assignments, and not economical as described below.

Several organizations at Hill AFB that own ECMs were consulted and their existing facilities inspected for potential mission use. It was determined through this consultation that none of the existing ECMs are available for immediate or future use. Several ECMs in the MAMS II area were inspected and were found to be functionally unacceptable for the mission purpose and costly to modify the existing ECMs to meet mission requirements. Existing ECMs also were not located in an area that was suitable for the mission requirement. Most of the new Modular Storage Munitions (MSM) units need to be outside of the Arms Control Area, kept together, and close to the airfield.

Dugway Proving Ground is located approximately 80 miles west-southwest of Salt Lake City, Utah, in Tooele County. Its mission is to test biological and chemical defense systems. Little Mountain is located 24 miles northwest of Hill AFB. It is also a test

facility part of the Air Materiel Command's OO-ALC. Map 2-1, Location Map, shows the locations of these alternative sites. These locations were found to be impractical for the Proposed Action due to the munitions having to be transported frequently across public roadways, which could pose safety and security issues. Also, both alternate locations did not fulfill the requirements for quick response and 24-hour alert status capabilities.

The new MSMs need to be situated where the Program Management Office is located. The Program Management Office has responsibilities such as accountability, reviews, inspections, oversight, etc., which would make building the Proposed Action at other locations more costly and less efficient. Other sites, such as Little Mountain and Dugway Proving Ground have been dismissed by Pentagon executives for this reason along with those cited above.

2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action Major Initiatives are summarized in Table 2-1.

Source: U.S. Army Topographic Command (ASGE) 1955, revised by the U.S. Geological Survey 1970. Area boundaries approximated from Archives Search Report, prepared by U.S. Army Corps of Engineers, St. Louis District.

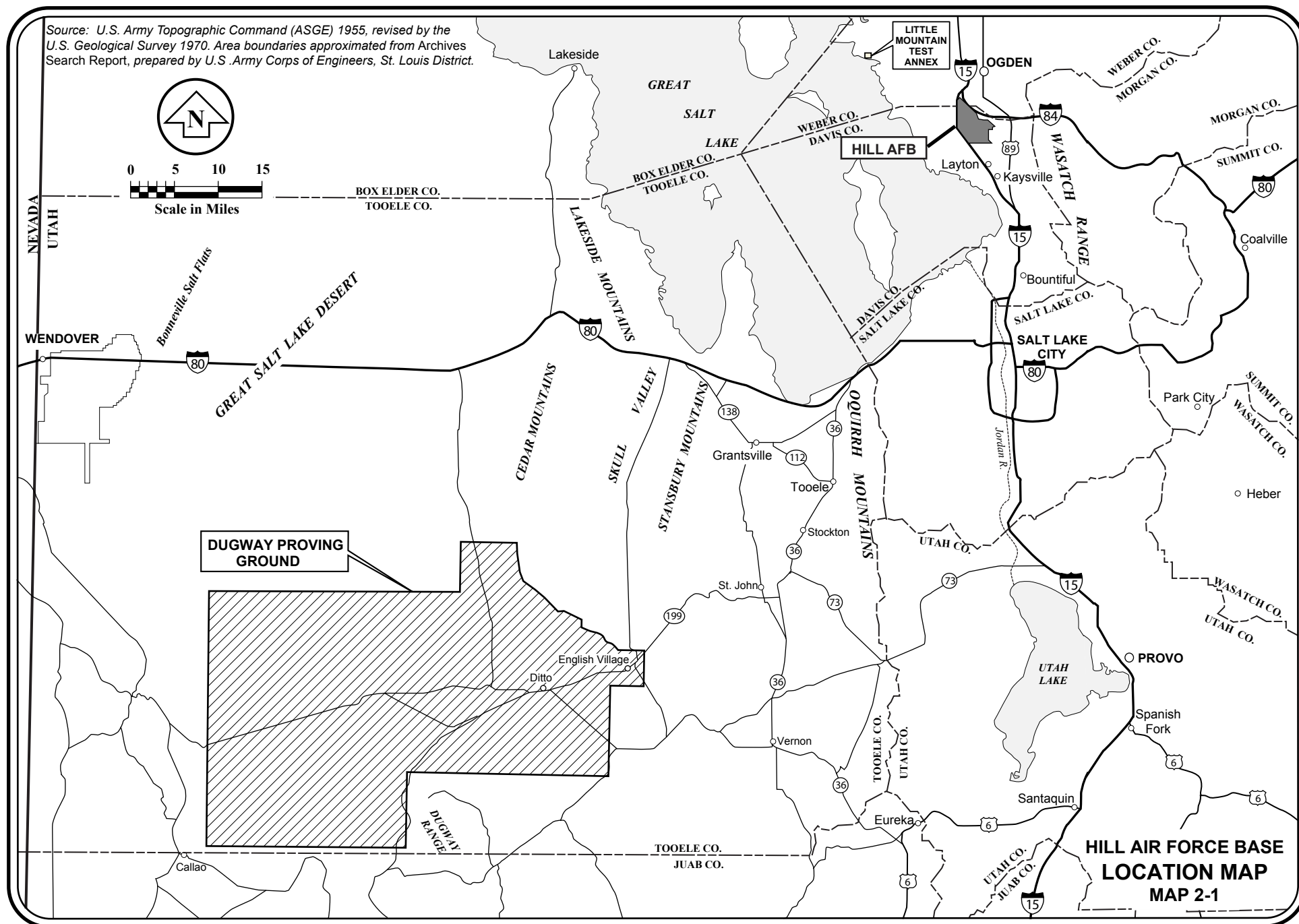
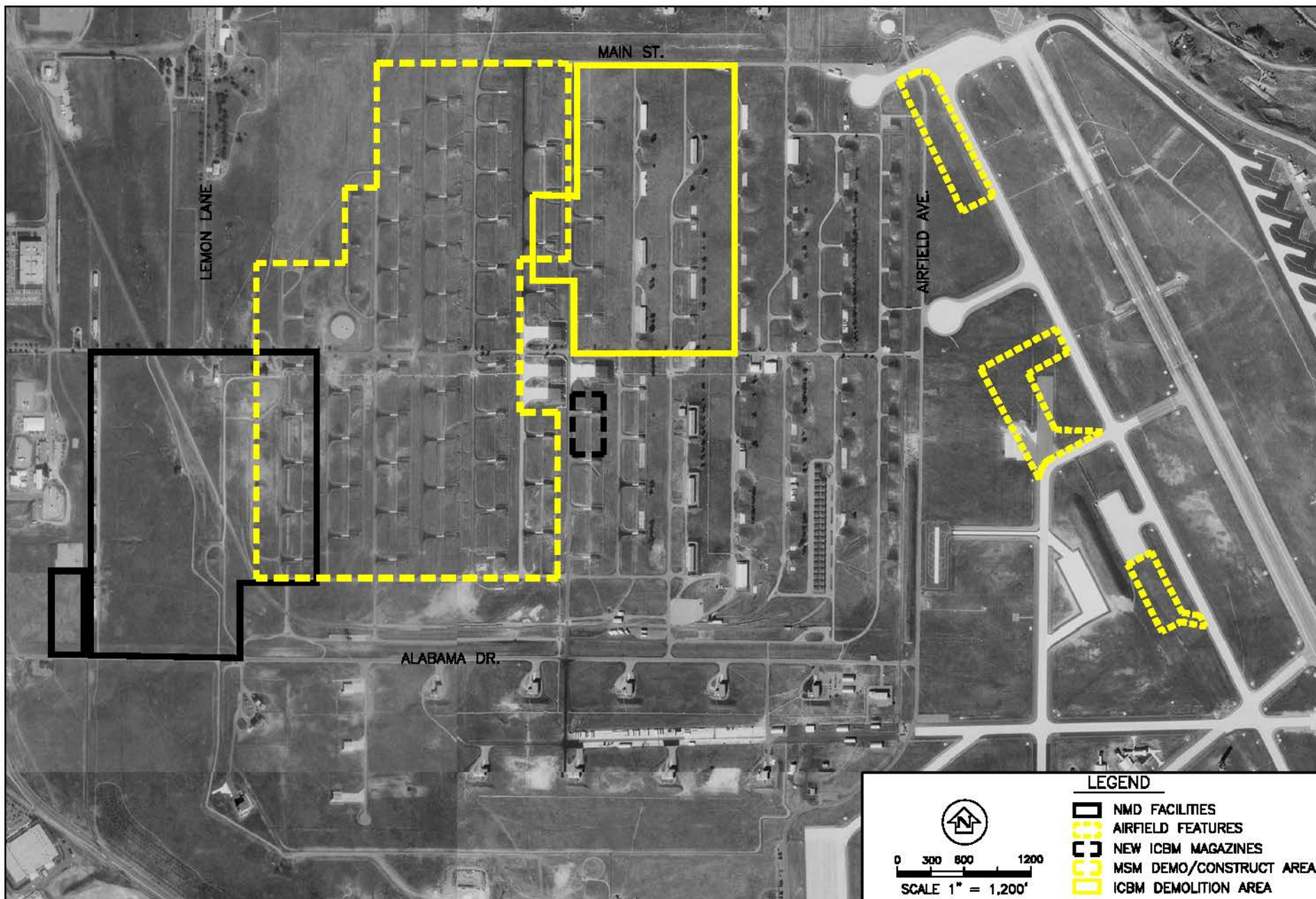


TABLE 2-1
ECZ MASTER PLAN MAJOR INITIATIVES

Initiative	Description
1. Munitions Storage Revitalization	Demolish 10 existing ECMs Demolish 2 Clay Tile Magazines Construct up to 80 new MSMs
2. ICBM Storage Revitalization	Demolish 44 single missile igloos Construct 3 Navy Type Storage Magazines
3. National Missile Defense (NMD)	Construct new NMD facilities
4. Airfield Operations Short Term Development Plan	Construct new End of Runway (EOR) facility, Taxiway C to A parking ramp, expand Hot Pad 6
5. Propellant Lab Relocation	Move Propellant Lab to MAMS II

Proposed Action Major Initiative Number 1. Referred to as the Munitions Storage Revitalization, the scope of this initiative is to demolish 10 existing ECMs and construct up to 80 new MSMs within the MAMS I area. Additionally, two above ground storage magazines (locally known as “clay tile buildings” numbers 1471 and 1476) in MAMS I would be demolished. The area of new MSM development is shown on Map 2-2, Hill Air Force Base ECZ Initiatives. A listing of ECMs to be demolished in the initial phases of the Master Plan implementation is located in Appendix B. Associated with the development of the new MSMS, four new paved access roads would be developed and other existing roads would be widened and repaved. The new roads would total approximately 10,128 linear feet. Reinforced access aprons also would be constructed between alternate pairs of new MSMs to provide drive-through capability for loading and unloading of transport vehicles. At least 12 new aprons would be constructed, totaling approximately 30,000 square feet.



The proposed new MSMs would be Hayman Type igloos, 26 feet by 80 feet (2080 square feet) and 14 feet high. New MSM capacity would be 29,120 cubic feet versus 17,160 square feet in ECMs. Facilities would be constructed of concrete, with metal doors, and an earth-covered roof. Ventilation systems, lighting, protection from lightning, alarms, security locks, and communications would be provided to each unit. Approximate cost of each new MSM is \$400,000.

Explosive capacity of the new MSMs would be up to 500,000 pounds NEW, depending on siting. Required spacing between MSMs is based on NEW; under 250,000 pounds of NEW the separation is 66 feet, greater than 250,000 pounds of NEW the separation is 100 feet. The new style MSMs can be sited with a footprint of four units in the space occupied by two of the ECMs. Total storage capacity would be 116,400 cubic feet in the new footprint of four MSMs versus 34,320 cubic feet in the old footprint of two ECMs.

Demolition of existing igloos and buildings required by this and all other proposed action major initiatives would involve removal of structural elements, utilities and ramps and driveways. Materials removed during demolition will be hauled off site and disposed of appropriately. Fill material for earth cover may be taken from a borrow site within the ECZ. Igloo sites will be regraded and seeded with a standard Hill AFB grass mixture. Construction activities associated with the Proposed Action include earthwork, roadway paving, concrete formwork for buildings and aprons, and installation of utilities. Once the MSMs and Missile Magazines are constructed, equipment that may be used at the facilities includes forklifts, front end loaders, and trucks. Maintenance checks would be

conducted every six months for each asset stored. Because new assets would be stored continuously, frequency of maintenance checks at the facilities would average four hours per week. Delivery of assets would occur by air, train, or truck. Frequency of delivery varies since deliveries are made on an as-needed basis.

Proposed Action Major Initiative Number 2. The scope of this initiative, referred to as the ICBM Storage Revitalization, is to demolish 44 existing single missile storage igloos and replace them with three new ICBM Navy Type Storage Magazines capable of storing 16 boosters each. Existing ICBM igloos are larger than necessary for storage of one booster, require excessive use of utilities and maintenance, and are spread out over a large land area requiring maintenance and security. The new Storage Magazines would have an area of 14,400 square feet and would occupy a footprint of approximately 3.5 acres. This initiative would create approximately 230 acres of space available for new program development. The project location within the MAMS Area I is shown on Map 2-2; the areas of demolition and new construction are identified separately.

Proposed Action Major Initiative Number 3. Referred to as the National Missile Defense (NMD) Initiative, this proposed action involves the potential development of NMD system facilities in the southwestern area of MAMS I, as shown on Map 2-2. Proposed NMD facilities within the ECZ would include 19 new assembly, assay and checkout facilities and three new storage structures. There would also be NMD administration, entry control, inert parts storage, maintenance, and test and control

facilities immediately west of the ECZ boundary. Construction of new facilities would total approximately 193,654 square feet.

Proposed Action Major Initiative Number 4. Referred to as the Airfield Operations Short Term Development Plan, this proposed action would include development of new airfield facilities including an expanded end of runway (EOR) aircraft arm/dearm area (600 X 200 feet), a new Taxiway C to Taxiway A Flow-through parking ramp for combat aircraft and large body aircraft (800 X 400 feet), and expansion of Hot Pad 6 (600 X 200 feet) as shown on Map 2-2. This proposed action also includes paved shoulders and taxi ramps that would create a total of approximately 20 acres of new aircraft parking, taxiing, and service area and improved aircraft ground traffic flow.

Proposed Action Major Initiative Number 5. This proposed action consists of the relocation of the Propellant Lab within MAMS II. This initiative has been covered in a separate EA and will not be considered further in this document.

2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no demolition of existing facilities or construction of new facilities. The Air Force would forfeit current and projected future mission capabilities due to insufficient storage space and net explosive capacity for new munitions. Existing and new missions require larger, more complex, and more diverse munitions. Under the No Action Alternative, ECZ infrastructure would not be prepared

for these munitions. Surface resources would remain in their existing condition. The No Action Alternative would not satisfy the Air Force's identified current and future missions.

2.6 DETAILED DESCRIPTION OF OTHER ACTION ALTERNATIVES

As previously described in Section 2.3, there are no other action alternatives identified that meet the Purpose and Need of the identified missions, therefore the No Action Alternative is the only alternative carried forward into detailed analysis.

2.7 COMPARISON MATRIX OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

A summary of the environmental effects of each alternative is presented in Table 2-2. These potential impacts are discussed in detail in Section 4.0 of this EA.

2.8 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The selection criteria that were established to evaluate the Proposed Action and the No-Action Alternative are as follows:

Mission Accomplishment. Mission workloads would be accomplished in the most efficient and cost-effective means possible that would meet the proposed schedule.

TABLE 2-2
COMPARISON MATRIX OF ENVIRONMENTAL EFFECTS

Resource	Proposed Action	No Action
Air Quality	No Effect	No Effect
Noise	No Effect	No Effect
Land Use	No Effect	No Effect
Geology	No Effect	No Effect
Soils	No Effect	No Effect
Threatened and Endangered Species	No Effect	No Effect
Flora	No Effect	No Effect
Fauna	No Effect	No Effect
Safety and Occupational Health	Beneficial Effect During Operation	No Effect
Socioeconomics	Minimal Effect	No Effect
Natural and Cultural Resources	No Effect	No Effect
Infrastructure/Utilities	Short-Term Minimal Effect During Construction Long-Term Beneficial Effect During Operation	No Effect
Hazardous Materials and Waste	No Effect	No Effect
CERCLA	No Effect	No Effect

Space and Other Special Requirements. The facilities would meet the following requirements:

- Quick response and 24-hour alert status capabilities.
- Effective and efficient utilization of the ECZ resource in support of current and future mission requirements.
- Maximized munitions storage capacity on the Base in terms of design, configuration, and effective utilization.

Economic Feasibility. Only cost-effective means for facility development would be considered.

Minimization of Environmental Impacts. The action would result in minimal environmental impacts and would be capable of managing and storing necessary regulated munitions.

Therefore, due to identified strengths of locating munitions storage on Hill AFB, and due to identified weaknesses of existing facilities and off-site locations, the Proposed Action is considered the preferred alternative to providing storage for the new mission.

2.9 MITIGATION REQUIREMENTS MATRIX

No mitigation activities are required as part of the Proposed Action or the No Action Alternative. The proposed construction location of the new MSMs, booster storage facilities, NMD facilities and airfield development are within the existing previously developed ECZ, which has been zoned for explosives handling and mission operations at Hill AFB.

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes the affected environment (baseline conditions) for resources of the human environment that could be impacted by construction, operation, and maintenance of the Proposed Action described in Section 2. Baseline conditions are the existing physical conditions of affected resources in the proposed project area as of January 2003. The analysis presented in this section focuses on construction, operation, and maintenance of the Proposed Action.

3.2 INSTALLATION LOCATION, HISTORY, AND CURRENT MISSION

Hill AFB covers about 6,700 acres and is located on the Weber Delta, a terrace approximately 300 feet above the surrounding valley floor in Weber and Davis counties. Hill AFB has been the site of military activities since 1920 when the western portion of what is now the Base was activated as the Ogden Arsenal, an Army Reserve Depot. In 1940 and 1941, four runways were built and the Ogden Air Depot was activated. During World War II, the Ogden Arsenal manufactured ammunition and was a distribution center for motorized equipment, artillery, and general ordnance. The Ogden Air Depot's primary operation was aircraft rehabilitation. In 1948, the Ogden Air Depot was renamed Hill AFB, and in 1955, the Ogden Arsenal was transferred from the U.S. Army to the U.S. Air Force. Since 1955, Hill AFB has been a major center for missile assembly and

aircraft maintenance. Currently, Hill AFB is part of the Air Logistics Center under the Air Force Materiel Command (Hill AFB 2003a).

The Hill AFB Explosives Clear Zone (ECZ) covers approximately 3,054 acres (over 47% of the base) and is tasked to multiple organizations with a variety of missions, including storage, maintenance, testing, transportation, disposal and contingency operations. The area is organized into five areas: Missile and Munitions Storage Areas (MAMS I and MAMS II), the 1600 and 1900 propellant aging and surveillance facilities areas, and the explosives-loaded aircraft parking areas.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This section presents a description of the resources present at Hill AFB and potential issues that must be considered prior to proceeding with the Proposed Action. This discussion focuses on the following topics: air quality, surface water quality, groundwater hydrology, noise, land use, geology, soils, threatened and endangered species, flora, fauna, safety and occupational health, socioeconomics, historical and cultural resources, infrastructure/utilities, and hazardous materials and waste.

3.3.1 Air Quality

Air quality in the vicinity of Hill AFB (Davis and Weber counties) is influenced by vehicle, refinery, and Davis County Burn Plant emissions, aircraft operations, and other

on- and off-Base industrial emissions (MWH 2001). Hill AFB is located in both Davis and Weber counties, and neither county is in complete compliance with National Ambient Air Quality Standards (NAAQS). In July 1997, the EPA issued final revisions to the ozone and PM_{2.5} standards; however, these standards are currently under reconsideration because of a U. S. Court of Appeals opinion issued May 14, 1999 (EPA 2003a). The EPA designated Davis County as a maintenance area for ozone as of November 2002 (EPA 2003b). The City of Ogden has been designated a non-attainment area for particulate matter less than ten micrometers in diameter (PM₁₀) (EPA 2003c).

3.3.2 Surface Water Quality

Hill AFB does not have surface water rights (Hill AFB EM 2003). Hill AFB is drained by three off-base systems; Kays Creek to the south, Fife Ditch to the southwest, and the Weber-Davis Canal (belonging to the Weber Basin Project) to the west, north and east. The northern two-thirds of the ECZ drains into the Davis – Weber Canal and the southern third into Kays Creek. The Davis – Weber Canal empties into the Weber River, which drains into the Great Salt Lake. Three drainage ponds have been constructed along the southern boundary of Hill AFB to control the runoff from the southeastern portion of the base. The surface water then drains into Kays Creek via a three-mile outfall line or percolates through the bottom of the ponds. Kays Creek is a natural drainage channel that flows into the Great Salt Lake. Storm drainage is accomplished under a National Pollution Discharge Elimination System (NPDES) permit that allows for only site runoff and non-contact cooling water to be discharged into Kays Creek (Hill AFB EM 2003).

Runoff from paved areas has the potential to affect the drainage system and surrounding ecosystem. Consequently, new operations for degreasing, paint stripping, painting and constructing parking lots must have prior state approval. In areas of Hill AFB that are not heavily developed, runoff is allowed to percolate into the ground by routing the water to undeveloped areas or retention ponds through drainage lines.

3.3.3 Groundwater Hydrology

The Delta Aquifer represents the major source of water for Hill AFB (Hill AFB EM 2003). The aquifer is a fan-shaped underground layer of porous rock and sand, containing water and functioning under artisan (confined) conditions. Although the thickness of the aquifer is unknown, the principal water-bearing zone is 50 to 150 feet thick. Hill AFB and most adjacent municipalities obtain water from wells in this aquifer. The depth to ground water on Hill AFB ranges from 480 to 520 feet.

Groundwater recharge originates as subsurface flow from the Wasatch Range, and to a lesser extent from direct infiltration from precipitation and seepage from streams and irrigated areas. Groundwater moves from recharge areas in a westward direction. The relatively high yields and low drawdowns observed in wells indicate a very productive aquifer. State-issued permits allow the base to withdraw 5,000 acre-feet of water annually. Hill AFB withdraws less than the allotted amount because of water conservation programs (Hill AFB EM 2003).

3.3.4 Noise

Engine noise from the testing and flight of aircraft is present throughout the day, although it is not persistent. In a typical year, more than 53,000 operations are logged by locally based and transient aircraft (Hill AFB 2003). The Air Force has developed the Air Installation Compatible Use Zone (AICUZ) program to minimize development that is incompatible with aviation operations in areas on and adjacent to military airfields. AICUZ land use recommendations are based on uses compatible with exposure to aircraft noise and safety considerations. Recommended compatible land uses are derived from data on noise contours (noise zones) and safety zones (Accident Potential Zones (APZs) (URS Corporation 2001).

3.3.5 Land Use

Hill AFB lands are managed based on three land categories that require active management: unimproved lands, semi-improved lands, and improved lands. The ECZ is considered semi-improved land. These lands are relatively undeveloped and are mowed frequently for vegetation, fire, and pest management measures. The major vegetation components in these areas are native and introduced grasses (Hill AFB EM 2003).

3.3.6 Geology

Geologic constraints on Hill AFB are shown on Figure 3-1. Two areas along the northeast boundary of the Base are shown as geologically unstable. These abut the ECZ, but are not in areas of planned development. An area in the southeastern portion of the Base is shown as a hazard for debris flow. This area does not involve the ECZ.

A fault line extends through the northeast boundary of the Base but does not intersect the main runway. A small portion of this fault lies within the ECZ cloud, but is not in an area of planned development.

3.3.7 Soils

Surface soils at Hill AFB in the ECZ are composed primarily of sand, gravel, silts and clays typical of the Weber Delta District. The soils are mostly well drained, having a slight to moderate erosion susceptibility. Surface layers are 7 to 17 inches thick. Silty-sand is present to approximately 600 feet deep with some isolated clay lenses 5 to 30 feet below the surface (Hill AFB EM 2003).

3.3.8 Threatened and Endangered Species

There are no known “threatened” or “endangered” species inhabiting the ECZ area of Hill AFB. Further, no animals on Hill AFB are classified as “declining” (population has

Source: HAFB (2).



HILL AIR FORCE BASE
GEOLOGIC CONSTRAINTS ON BASE
FIGURE 3-1

been greatly depleted or continues to decline) or “limited” (species is limited due to restricted habitat). (Hill AFB EM 2003)

A Section 7 consultation from the United States Fish and Wildlife Service is not required because there are no resident federal threatened or endangered species on Hill AFB (Hill AFB EM 2003).

3.3.9 Flora

Existing herbaceous vegetation in the ECZ consists of native and introduced grasses and weeds. Russian olive trees (*Elaeagnus angustifolia*) line the west boundary of the ECZ. The herbaceous vegetation is regularly mowed very short for fire and pest management.

3.3.10 Fauna

No fish inhabit Hill AFB proper. Sixty-two species of mammals may occur on Hill AFB and associated lands (Hill EM 2003). The Proposed Action Area within the ECZ has low wildlife values due extensive human activity and closely mowed vegetation that provides little forage value and essentially no cover value for wildlife. No wildlife was observed during the MWH site visit and the only wildlife sign observed was pocket gopher (*Thomomys bottae*) mounds. Red fox (*Vulpes vulpes*) has been observed in the MAMS I area (CMSgt. F. Schoettler, personal communication).

3.3.11 Safety and Occupational Health

As a matter of Hill AFB policy, all demolition and construction plans are reviewed (as appropriate) by Bio-Environmental Engineering Flight (75 AMDS/SGPB). At that time, any potential health concerns are reviewed with the contractor(s) performing the construction work. During construction, all construction personnel are required to comply with 29 CFR 1926, *Safety and Health Regulations for Construction*. Other worker health and safety concerns are addressed in Standard Operation Procedures (SOPs) and in the facility designs. Adherence to all relevant Department of Transportation (DOT) regulations regarding chemical transportation, packaging, and labeling is also required.

3.3.12 Socioeconomics

As of October 2002, the Hill AFB work force was comprised of approximately 23,000 personnel, of whom 13,000 were civilians, 4,700 were military, 3,700 were contractors, and 1,600 were reservists. The 2002 combined estimated population of Davis and Weber Counties is approximately 444,275 (US Census Bureau 2003). Consequently, Hill AFB represents a major employer in the two-county area. Approximately 53% of the workforce in Davis County and 27% of the workforce in Weber County are employed by the federal government (URS Corporation, 2001).

3.3.13 Historical and Cultural Resources

As stated in Section 1.3.4, Section 106 of the National Historic Properties Act (NHPA) requires federal agencies to take into account how each of its proposed undertakings could affect historic preservation. There are numerous historic structures over 50 years in age that would be demolished in implementing the ECZ Master Plan. These will be catalogued by Hill AFB, and the Hill archeologist will coordinate with the State Historic Preservation Office (SHPO).

3.3.14 Infrastructure/Utilities

The Base infrastructure consists of systems that support Base-wide activities. Examples of base infrastructure that are present in the ECZ include rail, access roads, and other transportation facilities; industrial wastewater, stormwater, and sanitary sewer systems; fueling and defueling areas and facilities; electrical stations and power lines; security systems; surplus equipment and materials storage areas; and disposal areas.

3.3.15 Hazardous Materials and Waste

To support the past and present operations at Hill AFB, a variety of on-base industrial operations have been established for aircraft, missile, vehicle, and railroad engine maintenance and repair, including metal plating, degreasing, paint stripping, painting, sanding, and other operations. These industrial operations used or generated numerous

chemicals and wastes, including chlorinated and non-chlorinated solvents and degreasers, petroleum hydrocarbons, acids, bases, and metals. These chemicals and their associated waste products were historically disposed of at the Industrial Wastewater Treatment Plant, in chemical disposal pits, in landfills on the Base or at other Air Force facilities (MWH 1999).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

The Proposed Action is the Explosives Clear Zone (ECZ) Master Plan. The environmental consequences of implementing the Proposed Action and the No Action Alternative are discussed in this section. The environmental resources are addressed in the same sequence as in Section 3.0, Affected Environment.

4.2 CHANGE IN CURRENT MISSION

The current mission of Hill AFB is to provide depot repair, modification, and maintenance support to major aircraft and weapon systems. No changes in or impacts to the current mission of Hill AFB would occur as a result of implementing the ECZ Master Plan. An added mission resulting from the ECZ Master Plan would be providing Administration, Air Transport Service (ATS), Strategic Air Transport (SAT), and Hazard Class/Division (HC/D) 1.3 ordinance storage for the National Missile Defense system.

The No Action Alternative would not change the current mission of Hill AFB. It could prevent Hill AFB from meeting current and future mission requirements and impair operational efficiency.

4.3 DESCRIPTION OF THE EFFECTS OF ALL ALTERNATIVES ON THE AFFECTED ENVIRONMENT

The following paragraphs discuss the resources within the ECZ and potential impacts on these resources if the Proposed Action or the No Action Alternative is implemented. This discussion focuses on the following areas: air quality, surface water quality, groundwater hydrology, noise, land use, geology, soils, threatened and endangered species, flora, fauna, safety and occupational health, socioeconomics, historical and cultural resources, infrastructure/ utilities, and hazardous materials and waste.

4.3.1 Air Quality

Under the ECZ Master Plan, short-term temporary emissions of air pollutants may occur during construction activities. Specifically, these may include a minor increase in particulate matter from fugitive dust, pollutants such as VOCs, CO, and oxides of nitrogen (NO_x) from heavy equipment and vehicle exhaust. These emissions, however, do not represent a significant cumulative impact to local ambient air quality standards. To minimize fugitive dust, UAC R307-12-3 requires that watering and/or chemical stabilization or other equivalent approved methods be employed during construction activities.

Because an increase in the volume of work is anticipated due to the construction of National Missile Defense (NMD) facilities, in accordance with the CAA and UAC R307-

1-3, a new Approval Order (AO) would be required. A Notice of Intent (NOI) should be submitted to the Utah Division of Air Quality (UDAQ) that identifies the new facility location, the equipment to be relocated, and any process modifications, as appropriate. The Hill AFB Title V Permit Application would need to be revised to incorporate these changes.

The No Action Alternative would not change air quality in the ECZ.

4.3.2 Surface Water Quality

The proposed action would create new areas of impermeable land cover, especially in the vicinity of airfield taxiway and aircraft parking area construction. Existing surface water runoff facilities would require extension to capture runoff from areas of new development. With implementation of current Hill AFB surface water management policies and procedures, the ECZ Master Plan would not affect surface water quality.

The No Action Alternative would not affect surface water quality.

4.3.3 Groundwater Hydrology

Hill AFB is not currently using its total groundwater permit allocation. Existing water conservation programs would be applied to any new development resulting from the ECZ Master Plan. The ECZ Master Plan would not affect groundwater hydrology.

The No Action Alternative would not affect groundwater hydrology.

4.3.4 Noise

No long-term increase in noise would occur as a result of implementing the ECZ Master Plan. Any noise generated during construction activities would be limited to areas immediately adjacent to the site, and any potential health concerns for site workers exposed to excessive noise during construction activities would be addressed in the construction SOPs.

Under the No Action Alternative there would be no increase in noise levels from construction, operation or maintenance of the ECZ.

4.3.5 Land Use

The ECZ is currently designated for munitions storage and servicing. As the result of the ECZ Master Plan, there would be a change in the configuration of storage facilities in the MAMS I area, but not in the function of the area. Old-style munitions storage igloos would be removed from approximately 229 acres and new MSMs and ICBM magazines would be developed on approximately 73 acres. There would be development of new facilities in the NMD Initiative area, involving approximately 57 acres. There would be development of new airfield aircraft parking and taxiing areas with paving of

approximately 20 acres of previously unpaved areas. All of the newly developed land has been previously designated for military purposes therefore there would be no change in the basic land use of these areas.

Under the No Action Alternative there would be no change in current land use in the ECZ.

4.3.6 Geology

The ECZ Master Plan would not change the geology of the ECZ.

The No Action Alternative would not change the geology of the ECZ.

4.3.7 Soils

Under the ECZ Master Plan, construction of new facilities and demolition of existing structures would disturb some surface soils. The remaining soils in the ECZ would remain unaffected. All disturbed areas except roadways, igloo aprons and airfield facilities would be seeded and maintained to control erosion. There would be no significant impact to soils in the ECZ.

The No Action Alternative would not change existing soil conditions in the ECZ.

4.3.8 Threatened and Endangered Species

Because there are no known threatened or endangered species on Hill AFB, there would be no effect on threatened or endangered species as a result of the ECZ Master Plan.

The No Action Alternative would not affect threatened and endangered species.

4.3.9 Flora

Estimated area of vegetated land lost by construction of ECZ Master Plan facilities is shown in Table 4-1. There would be a small area of vegetated land gained by demolition of the clay tile buildings (approximately 0.5 acres). Demolition of existing old-style munitions and ICBM igloos was not included in the floral disturbance area because they are currently covered with soil and vegetation and would revert to vegetated land after reseeding. Areas surrounding new facilities that would be disturbed during construction would be reseeded with the Hill AFB standard grass mixture. Vegetated areas would be maintained during operation under current practice, which is mowed short for wildfire and pest control.

<p style="text-align: center;">Table 4-1 Estimated Land Disturbance by the ECZ Master Plan</p>	
Activity	Area (acres)
Construction of 80 MSMs with aprons (full bed down)	6.2
Construction of 3 ICBM Magazines with aprons	1.2
Construction of Airfield facilities	20.0
Construction of NMD facilities	4.8
Construction of new roadways	4.5
Total	36.7

The No Action Alternative would not cause land disturbance or change in existing flora.

4.3.10 Fauna

Construction of ECZ Master Plan would permanently remove 36.7 acres of low-value potential wildlife habitat (Table 4-1). The permanent loss of this area would not be a significant habitat loss compared to total available habitat within and adjacent to the ECZ, and because of the low habitat values of the area removed. There would be no measurable impacts on any wildlife species or populations.

The No Action Alternative would not affect existing fauna.

4.3.11 Safety and Occupational Health

OSHA requires employers to comply with regulations and standards established by OSHA to protect worker health and safety. During construction of proposed ECZ Master Plan facilities, all construction personnel would be required to comply with Title 29 of

the Code of Federal Regulations, part 1926 (29 CFR 1926), *Safety and Health Regulations for Construction*. Construction activities conducted as part of the ECZ Master Plan would be reviewed with the contractor(s) performing the work to assess potential safety and health concerns. Standard construction safety precautions would include excavation and trenching, slip/trip/fall, heavy lifting, electrical hazards, motor vehicle hazards, hot work permits, sharp edges and pinch points, noise, personal protective equipment, heat/cold stress, heavy equipment use, and site control, at a minimum.

The Proposed Action would have beneficial effects during operation from more efficient munitions storage and reduced risk of injuries from improved storage area access.

The No Action Alternative would not cause safety or occupational health impacts.

4.3.12 Socioeconomics

Positive socioeconomic impacts would be minimal under the ECZ Master Plan. Construction of new facilities would provide temporary employment for some workers. Operation and maintenance of new facilities and associated missions would not cause a significant change in Hill AFB staffing.

The No Action Alternative would cause Hill AFB to forfeit new missions and could reduce the Base's ability to meet current and future mission requirements.

During operation of the Proposed Action, health and safety risk would be reduced because work within the ECZ would be more efficient with more room for equipment to operate.

4.3.13 Historical and Cultural Resources

All historic structures located within the ECZ that are catalogued by Hill AFB will be fully documented in full compliance with the NHPA prior to any demolition or alteration.

There would be no impact on historic structures by the No Action Alternative.

4.3.14 Infrastructure/Utilities

As stated previously, most of the infrastructure required by the new facilities is already in place or nearby. There is the potential for construction and demolition activities during the ECZ Master Plan to impact existing utilities (i.e., accidentally severing a power line, causing a break in a water line, etc.). However, this risk can be adequately addressed by involving Hill AFB personnel in determining the location of sanitary sewers, stormwater sewers, potable water lines, electrical lines, and natural gas lines (as appropriate) in the vicinity of the proposed construction and demolition sites. The locations of all utilities must be confirmed by Mr. Bob James of Red Stakes, telephone (801) 777-1995.

During operation of the Proposed Action, there would be less potential for damage to existing infrastructure/utilities because the ECZ footprint is reduced and operations within the ECZ will be more efficient. Equipment operators will have more room to move munitions in and out of the new structures.

The No Action Alternative would not impact utilities or infrastructure.

4.3.15 Hazardous Materials and Waste

Any hazardous wastes generated during new facility development, demolition of existing facilities or operations at Hill AFB would be handled in accordance with the Hill AFB Hazardous Waste Management Plan. The Hazardous Waste Management Plan is updated annually and directs the routine and proper handling, storage, and disposal of hazardous waste.

The No Action Alternative would not change hazardous waste management in the ECZ.

4.4 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

Based on the discussion of potential environmental impacts presented in Section 4.3, the Proposed Action and the No Action Alternative would not create any significant unavoidable adverse environmental impacts.

4.5 COMPATIBILITY OF THE PROPOSED ACTION AND ALTERNATIVES WITH THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS

The new proposed facilities would be sited in a compatible land use category, specifically the ECZ area of Hill AFB. This area currently contains other equivalent structures and operations including transport, storage and maintenance of munitions. Consequently, most of the infrastructure required by the new facilities is already in place or nearby this location. The Proposed Action would condense munitions storage in less area of the ECZ than present and free up area for other missions such as airfields.

The No Action Alternative would not change current land use.

4.6 RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Hill AFB is an active military facility. The current mission of Hill AFB is to provide depot repair, modification, and maintenance support to major aircraft and weapon systems. The proposed land use changes for Hill AFB and implementing the ECZ Master Plan would enhance current and future mission capability and flexibility.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Neither the Proposed Action nor the No Action Alternative would cause an irreversible and irretrievable commitment of resources because Hill AFB property has been previously committed for military use.

5.0 LIST OF PREPARERS

The following MWH personnel were involved in preparation of this EA:

- Christine Whittaker, Project Manager
- Stephen Cox, Project Environmental Scientist
- Mark Plested, Program Manager
- Roberta Schlicher, Project Reviewer

6.0 LIST OF PERSONS AND AGENCIES CONSULTED

The following agencies and persons were consulted during the preparation of the EA:

- Dennis Steigerwalt (OO-ALC/XPP), Chairman Explosives Clear Zone (ECZ) Management Team
- Kay Winn (OO-ALC/EMR), Environmental Management Directorate
- TSgt. Brad Richardson (649 MUNS)
- CMSgt. Fred Schoettler (649 MUNS)
- Ellen Kirk (OO-ALC/QL) Directorate of Specialized Management

To fully comply with National Environmental Policy Act (NEPA) regulations, a copy of the Proposed Final Environmental Assessment will be made available for public review and comment. A Notice of Availability will be sent to all agencies contacted and to potentially interested parties, and will be published in local newspapers.

7.0 REFERENCES

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APPENDIX A

FINDING OF NO SIGNIFICANT IMPACT

Purpose and Need for the Proposed Action

Hill Air Force Base (AFB) is home of the Ogden Air Logistics Center (OO-ALC), one of three Air Logistics Centers that are part of the Air Force Materiel Command. The current mission of Hill AFB is to provide depot repair, modification, and maintenance support to major aircraft and weapon systems. The purpose of this Environmental Assessment is to determine whether implementation of the Proposed Action (Explosives Clear Zone (ECZ) Master Plan) would have a significant impact on human health or the environment. The purpose of the ECZ Master Plan is to enhance mission effectiveness and resource efficiency, to integrate all organizational requirements, and to formulate a corporate execution strategy. The proponent for this action is the Directorate of Specialized Management at Hill AFB.

The Proposed Action initiatives are summarized in Table 1.

TABLE 1 ECZ MASTER PLAN MAJOR INITIATIVES	
Initiative	Description
1. Modular Storage Munitions (MSM) Revitalization	Demolish 10 existing Earth Covered Magazines (ECM) Demolish 2 Clay Tile Magazines Construct up to 80 new MSMs
2. Intercontinental Ballistic Missile (ICBM) Storage Revitalization	Demolish 44 single missile igloos Construct 3 Navy Type ICBM Storage Magazines
3. National Missile Defense (NMD)	Construct new NMD facilities
4. Airfield Operations Short Term Development Plan	Construct new End of Runway (EOR) facility, Taxiway C to A parking ramp, expand Hot Pad 6
5. Propellant Lab Relocation	Move Propellant lab to Munitions and Missile Storage (MAMS) Area II

There are significant limitations to the existing facilities on the Base. The ECZ contains 621 facilities that are affected by Quantity – Distance (Q-D) standards. Munitions are stored in Earth Covered Magazines (ECM), many of which were constructed in the 1930s and 1940s and are severely outdated in terms of design, configuration, and effective utilization. Many are deteriorating and in need of extensive rehabilitation or replacement. The configuration of the ECM entry doors makes munitions loading and unloading inefficient. The interior configuration of the ECMs does not allow full utilization of

interior space for munitions storage. The placement of ECMs was based on Q-D criteria at the time and is now outdated and inefficient to meet current mission requirements. In sum, the existing facilities have been impacted by a reduction of nine million pounds of Net Explosive Weight (NEW) capacity and are two million NEW pounds short of meeting current mission mandates with little or no surge capability. Current requirements predict a need for at least a 40 percent increase in square foot capacity.

Selection Criteria and Alternatives Considered

Alternatives available for consideration for the implementation of ECZ Master Plan initiatives were limited. They included the following:

- Renovation of existing facilities and utilizing alternate installations were considered during the formulation of alternatives. Alternate installations included use of existing facilities on Hill AFB, and locating the new munitions storage off Hill AFB at Little Mountain or Dugway. These locations were found to be unfeasible, inconsistent with installation work assignments, and not economical. Therefore, alternate space and renovation alternatives were not retained for further consideration.
- Construction of no new facilities (No Action Alternative).

The selection criteria established to evaluate the Proposed Action and the No Action Alternative were as follows: mission accomplishment, space and other special requirements, economic feasibility, and minimization of environmental impacts.

Impact on Resources

The new facilities would accommodate all special space requirements such as quick response, 24-hour alert status capabilities, enhancement of munitions storage capacity and function on the base, and response to existing and future mission requirements. Worker health and safety issues would be addressed in standard operating procedures and in facility designs, and would be reviewed with the contractor(s) performing the work. Noise and air emissions generated by construction activities would be temporary. Air emissions and waste streams from the operation of the new facilities would be minimal. Because the new construction would be located within an area slated for munitions storage and airfield operations by Hill AFB, air quality, biological resources, surface water quality, groundwater hydrology, cultural and earth resources would not be impacted by the Proposed Action.

Minimal socioeconomic impacts are anticipated from the Proposed Action. Operation and maintenance of the new modular storage munitions and ICBM magazines would not require a significant number of new base employees. Implementation of the National Missile Defense Initiative would require some new contractor staff. Although the No Action Alternative would forfeit Air Force current and future mission capabilities due to insufficient storage space and net explosive capacity for munitions, the No Action Alternative would not have any negative impacts on the environment at Hill AFB.

Based on this Environmental Assessment, the Proposed Action meets the selection criteria for mission accomplishment, space and other special requirements, economic feasibility, and minimization of environmental impacts.

Conclusion

Based on the findings of this Environmental Assessment, I have determined that the Proposed Action to implement the ECZ Master Plan would not have significant adverse effects on the human environment or any of the environmental resources as described in the Environmental Assessment. Therefore, issuance of a Finding of No Significant Impact is justified and an Environmental Impact Statement is not required.

Environmental Protection Committee Chairperson

Date

APPENDIX B

APPENDIX B
ECZ Master Plan Building Demolition List

Structure Number	Type
Project Number KRSM003013	
1463	ECM
1464	ECM
1465	ECM
1466	ECM
1467	ECM
1476	Claytile
2248	MAMS II Storage
1469	Concrete Pad
1470	ECM
1471	ECM
1472	ECM
1473	ECM
1474	ECM
1475	ECM
Project Number KRSM023002	
1332	ECM
1333	ECM
1334	ECM
1335	ECM
1336	ECM
1337	ECM
1338	ECM
1339	ECM
1341	ECM
1342	ECM
1343	ECM
1344	ECM
1345	ECM
1346	ECM
1347	ECM
1348	ECM
1349	ECM
1357	ECM
1358	ECM
1359	ECM
1362	ECM
1363	ECM
1364	ECM
1365	ECM

Structure Number	Type
1440	ECM
1441	ECM
1442	ECM
1443	ECM
1444	ECM
1446	ECM
1447	ECM
1448	ECM
1449	ECM
1450	ECM
1451	ECM
1452	ECM
1453	ECM
1454	ECM
1455	ECM
1456	ECM
1460	ECM
1461	ECM
1462	ECM
1463	ECM
Project Number KRSM43009	
1932	ECM
1965	ECM
1940A	ECM
1940B	ECM
1941	ECM
1942	ECM
1943	ECM
1944	ECM
1945	ECM
1946	ECM
1947	ECM
1948	ECM
1949	ECM
1950	ECM
1952	ECM
2717	ECM